

IN THE CLAIMS

Please amend claims 1-10, and add new claims 11-15 as follows:

1 1. (Currently amended) A method of calculating a position of a
2 first radio station intended to be connected to a second radio
3 station, said calculating method using measurements of a ~~radio~~
4 ~~signal, called location signal, sent by an emitting radio station~~
5 ~~one of said first and second radio stations, called emitting radio~~
6 ~~station, to the other a receiving radio station of said first and~~
7 ~~second radio stations, called receiving radio station, and~~
8 propagated to said receiving radio station along a plurality of
9 radio paths including a shortest radio path, ~~characterized in~~
10 ~~that wherein~~ said location signal includes a plurality of N
11 identical messages, where N is greater than or equal to 4, combined
12 by said receiving radio station in order to obtain a signal of
13 higher energy than that of the received identical messages, of
14 which the shortest path is detected, said measurements of the
15 location signal being based on said shortest path.

1 2. (Currently amended) ~~A~~The method of calculating a position
2 of a first radio station as claimed in claim 1, for use in a spread
3 spectrum communication network, ~~characterized in that~~wherein ~~on~~
4 ~~transmission end~~ said messages sent by the emitting station are
5 coded with a specific spreading code, and ~~on the receiving end~~ ~~the~~
6 method further comprises:
7 - ~~a sampling step of~~ sampling received signals,
8 - ~~a first detection step of~~ detecting a first message of a
9 received location signal, said first message being received in a
10 time slot called reception time slot,
11 - ~~a first storage step of~~ storing samples received in a
12 time slot surrounding said reception time slot,
13 - ~~a second storage step of~~ storing samples received in time
14 slots surrounding the reception time slots of at least part of the
15 repeated messages of said received locations signal,
16 - ~~a processing step of~~ calculating a correlation function
17 of said stored samples with a pattern related to said message, and
18 - ~~a second detection step of~~ detecting a first maximum of
19 said ~~cross-correlation~~ correlation function.

1 3. (Currently amended) AThe method of calculating of a
2 position of a first radio station as claimed in claim 1,
3 ~~characterized in that it comprises a distance calculation step~~
4 ~~for~~further comprising calculating a distance between said
5 transmitting and receiving radio stations from a roundtrip
6 transmission time between said radio stations, where said
7 transmitting radio station sends a first location signal to said
8 receiving radio station, and said receiving radio station
9 determines a time of arrival of said first location signal when
10 propagated via said shortest path, and responds by sending back a
11 second location signal indicative of said time of arrival.

1 4. (Currently amended) AThe method as claimed in claim 3,
2 ~~characterized in that~~wherein said second location signal is
3 indicative of said time of arrival in that ~~the chips of it~~the
4 identical messages of said second location signal are rotated with
5 a value indicating said time of arrival.

1 5. (Currently amended) AThe method as claimed in claim 3,
2 ~~characterized in that~~wherein said second location signal is

3 indicative of said time of arrival in which it is sent in a frame
4 at a relative time indicating said time of arrival.

1 6. (Currently amended) A communication network comprising a
2 first radio station intended to communicate with a second radio
3 station which may move with respect to said first radio station, at
4 least one of said first and second radio stations comprising
5 sending means to send a radio signal called location signal
6 propagated to the other one of said first and second radio
7 stations via a plurality of radio paths including a shortest path,
8 and the other one of said radio stations comprising measuring means
9 for making measurements of said location signal and
10 calculating means for calculating a position of said second radio
11 station from said measurements, ~~characterized in that~~wherein said
12 location signal includes a plurality of identical messages,
13 combined by the other one of said first and second radio stations
14 in order to obtain a signal of higher energy than that of the
15 received identical messages, of which the shortest path is
16 detected, said measurements of the location signal being based on
17 said shortest path.

1 7. (Currently amended) ~~A spread spectrum~~The communication
2 network as claimed in claim 5, ~~characterized in that~~ 6, wherein
3 said transmitting station has encoding means for encoding said
4 plurality of identical messages with a specific spreading code, and
5 said receiving station has:
6 - sampling means for sampling received signals,
7 - first detection means for detecting a first message of a
8 received location signal, said first message being received in a
9 time slot called reception time slot,
10 - first storage means for storing samples received in a
11 time slot surrounding said reception time slot,
12 - second storage means for storing samples received in time
13 slots surrounding the reception time slots of at least part of the
14 repeated messages of said received location signal,
15 - processing means for calculating a correlation function
16 of said stored samples with a pattern related to said message, and
17 - second detection means for detecting a first maximum of
18 said ~~cross-correlation~~correlation function.

1 8. (Currently amended) AThe communication network as claimed
2 in claim 5, ~~characterized in that~~ 6, wherein said transmitting

3 radio station comprises distance calculation means for calculating
4 a distance between said transmitting and receiving radio stations
5 from a roundtrip transmission time between said radio stations,
6 where said emitting radio station has sending means for sending a
7 first location signal to said receiving radio station, and said
8 receiving radio station has determining means for determining a
9 time of arrival of said first location signal when propagated via
10 said shortest path, and responding means for sending back a second
11 location signal indicative of said time of arrival.

1 9. (Currently amended) A radio station comprising sending
2 means for sending a radio signal, called location signal, which may
3 be propagated via a plurality of radio paths including a shortest
4 path, measurements of said location-~~message~~ signal being used for
5 calculating a position of said radio station, ~~characterized in~~
6 ~~that~~ wherein said location~~s~~ signal includes a plurality of identical
7 messages, intended to be combined for obtaining a signal of higher
8 energy than that of the received identical messages, from which the
9 shortest path is detectable.

1 10. (Currently amended) A radio station intended to receive
2 location signals including a plurality of identical messages via a
3 plurality of radio paths including a shortest path, ~~characterized~~
4 ~~in that it comprises~~ said radio station comprising:

5 ~~— sampling means for sampling received signals,~~

6 - first detection means for detecting a first message of a
7 received location signal, said first message being received in a
8 first time slot ~~called reception time slot,~~

9 - first storage means for storing samples received in a second
10 time slot surrounding said ~~reception~~ first time slot,

11 - second storage means for storing samples received in a third
12 time slots surrounding the ~~reception~~ first time slots of at least
13 part of the repeated messages of said received location signal,

14 - processing means for calculating a correlation function of
15 said stored samples with a pattern related to said message, and

16 - second detection means for detecting a first maximum of said
17 ~~cross-correlation~~ correlation function, said first maximum
18 being used for distance calculation.

1 11. (New) The method of claim 1, wherein N is greater than or
2 equal to 4.

1 12.(New) A method of calculating a position of a first
2 station intended to be connected to a second station, said method
3 comprising:
4 forming a location signal that includes N identical messages;
5 transmitting said location signal from said first station to
6 said second station, said location signal being propagated to said
7 second station along a plurality of paths including a shortest
8 path, wherein said location signal includes N identical messages;
9 combining said N identical messages by said second station to
10 obtain a signal of higher energy than that of the received
11 identical messages, of which the shortest path is detected; and
12 calculating said position using measurements of the location
13 signal based on said shortest path.

1 13.(New) The method of claim 12, wherein N is greater than or
2 equal to 4.

1 14.(New) The method of claim 12, further comprising:
2 making measurements of said location signal; and
3 calculating said position from said measurements.

1 15.(New) A communication network comprising:
2 a first station configured to transmit a location signal; and
3 a second station configured to receive said location signal
4 propagated via a plurality of paths including a shortest path, to
5 make measurements of said location signal, and to calculate a
6 position of said first station from said measurements;
7 wherein said location signal includes a plurality of identical
8 messages, combined by said second radio stations in order to obtain
9 a signal of higher energy than that of the received identical
10 messages, of which the shortest path is detected; said measurements
11 of said location signal being based on said shortest path.